

We Claim:

1. A fuel dispensing system, said system comprising:
  - (a) a plurality of storage tanks for storing a plurality of fuel products;
  - (b) at least one dispenser;
  - (c) at least one pump for pumping fuel from said storage tanks to said dispenser; and
  - (d) a pump controller connected to said dispenser and said pump having a plurality of individual selectors for selecting a specific fuel product.
2. The apparatus according to Claim 1, further including an emergency stop system.
3. The apparatus according to Claim 2, wherein said emergency stop system includes at least one emergency stop actuator and at least one electrical power disconnecter.
4. The apparatus according to Claim 3, wherein said emergency stop actuator further includes a plurality of emergency stop actuators at various locations.
5. The apparatus according to Claim 3, wherein said electrical power disconnecter includes one for each dispenser and one for each pump.
6. The apparatus according to Claim 3, further including at least one accessory emergency stop disconnecter.
7. The apparatus according to Claim 3, further including an emergency system reset.

8. The apparatus according to Claim 7, wherein said emergency stop system reset is normally in an open position.

5 9. The apparatus according to Claim 7, further including an emergency stop system reset delay module.

10 10. The apparatus according to Claim 7, further including a microprocessor module, wherein said module provides additional functions including: emergency stop and reset switch diagnostics; status and mode indicators; and selectable connections to emergency stop and reset switches.

11. The apparatus according to Claim 1, wherein said storage tanks are underground storage tanks.

15 12. The apparatus according to Claim 1, wherein said pump is a submersible pump.

20 13. The apparatus according to Claim 1, wherein said pump includes at least one pump per product.

14. The apparatus according to Claim 1, further including a plurality of pumps having at least one pump per product.

25 15. The apparatus according to Claim 1, wherein said dispenser includes a product nozzle, at least one dispenser pump control signal for activating an associated pump, and a control signal actuator.

30 16. The apparatus according to Claim 1, wherein said control signal actuator is user actuated.

17. A pump controller for a fuel dispensing system having a plurality of storage tanks for storing a plurality of fuel products; at least one dispenser; at least one pump for pumping fuel from said storage tanks to said dispenser, said pump controller comprising:

- 5                   (a) a plurality of individual selectors for selecting a specific fuel product; and
- (b) an interconnecting expandable length bus for connecting additional station components to one another.

10           18. The apparatus according to Claim 17, wherein said plurality of selectors includes bus input selectors and bus output selectors.

                  19. The apparatus according to Claim 18, wherein each bus input selector is associated with a pair of bus pump control signal lines.

15           20. The apparatus according to Claim 19, wherein said pair of bus pump control signal lines are grouped in sets of four for a total of eight bus pump signal lines.

20           21. The apparatus according to Claim 18, wherein each bus output selector is associated with a pump.

                  22. The apparatus according to Claim 17, wherein said interconnecting expandable length bus for connecting additional station components to one another

25 includes a plurality of bus pump control signal lines.

                  23. The apparatus according to Claim 22, wherein said interconnecting expandable bus includes eight bus pump control signal lines.

30           24. The apparatus according to Claim 17, further including a bus power supply.

25. The apparatus according to Claim 17, further including a pump relay.

26. The apparatus according to Claim 17, further including a plurality of  
5 electrical isolators upstream of said plurality of selectors.

27. The apparatus according to Claim 26, wherein said electrical isolators  
are optical isolators.

10 28. The apparatus according to Claim 26, wherein said plurality of  
electrical isolators upstream of said plurality of selectors includes at least one isolator  
per dispenser pump control signal input.

29. The apparatus according to Claim 17, wherein said interconnecting  
15 expandable length bus for connecting additional station components to one another  
further includes at least one accessory control signal line.

30. The apparatus according to Claim 29, wherein said at least one  
accessory control signal line includes a lighting signal line.

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31. The apparatus according to Claim 29, wherein said at least one  
accessory control signal line includes an emergency stop signal line.

32. A fuel dispensing system, said system comprising:  
25 (a) a plurality of storage tanks for storing a plurality of fuel  
products;  
(b) at least one dispenser;  
(c) at least one pump for pumping fuel from said storage tanks to  
said dispenser;  
30 (d) a pump controller connected to said dispenser and said pump  
having a plurality of individual selectors for selecting a specific

fuel product, said pump controller including: (i) a plurality of individual selectors for selecting a specific fuel product; and (ii) an interconnecting expandable length bus for connecting additional station components to one another; and

5 (e) an emergency stop system.

33. The apparatus according to Claim 32, wherein said emergency stop system includes at least one emergency stop actuator and at least one electrical power disconnecter.

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34. The apparatus according to Claim 33, wherein said emergency stop actuator further includes a plurality of emergency stop actuators at various locations.

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35. The apparatus according to Claim 33, wherein said electrical power disconnecter includes one for each dispenser and one for each pump.

36. The apparatus according to Claim 33, further including at least one accessory emergency stop disconnecter.

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37. The apparatus according to Claim 33, further including an emergency system reset.

38. The apparatus according to Claim 37, wherein said emergency stop system reset is normally in an open position.

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39. The apparatus according to Claim 37, further including an emergency stop system reset delay module.

40. The apparatus according to Claim 37, further including a microprocessor module, wherein said module provides additional functions including: emergency stop and reset switch diagnostics; status and mode indicators; and selectable connections to emergency stop and reset switches.

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41. The apparatus according to Claim 32, wherein said storage tanks are underground storage tanks.

42. The apparatus according to Claim 32, wherein said pump is a submersible pump.

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43. The apparatus according to Claim 32, wherein said pump includes at least one pump per product.

44. The apparatus according to Claim 32, further including a plurality of pumps having at least one pump per product.

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45. The apparatus according to Claim 32, wherein said dispenser includes a product nozzle, at least one dispenser pump control signal for activating an associated pump, and a control signal actuator.

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46. The apparatus according to Claim 32, wherein said control signal actuator is user actuated.

47. The apparatus according to Claim 32, wherein said plurality of selectors includes bus input selectors and bus output selectors.

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48. The apparatus according to Claim 47, wherein each bus input selector is associated with a pair of bus pump control signal lines.

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49. The apparatus according to Claim 48, wherein said pair of bus pump control signal lines are grouped in sets of four for a total of eight bus pump signal lines.

5 50. The apparatus according to Claim 47, wherein each bus output selector is associated with a pump.

10 51. The apparatus according to Claim 32, wherein said interconnecting expandable length bus for connecting additional station components to one another includes a plurality of bus pump control signal lines.

52. The apparatus according to Claim 51, wherein said interconnecting expandable bus includes eight bus pump control signal lines.

15 53. The apparatus according to Claim 32, further including a bus power supply.

54. The apparatus according to Claim 32, further including a pump relay.

20 55. The apparatus according to Claim 32, further including a plurality of electrical isolators upstream of said plurality of selectors.

25 56. The apparatus according to Claim 55, wherein said electrical isolators are optical isolators.

57. The apparatus according to Claim 55, wherein said plurality of electrical isolators upstream of said plurality of selectors includes at least one isolator per dispenser pump control signal input.

58. The apparatus according to Claim 32, wherein said interconnecting expandable length bus for connecting additional station components to one another further includes at least one accessory control signal line.

5 59. The apparatus according to Claim 58, wherein said at least one accessory control signal line includes a lighting signal line.

60. The apparatus according to Claim 58, wherein said at least one accessory control signal line includes an emergency stop signal line.

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